

**MINUTES OF
SOUTHEAST LOUISIANA FLOOD PROTECTION AUTHORITY-EAST
COASTAL ADVISORY COMMITTEE MEETING
HELD ON FEBRUARY 21, 2013**

PRESENT: G. Paul Kemp, Chair
Rick Luettich, Committee Member

The Coastal Advisory Committee of the Southeast Louisiana Flood Protection Authority-East (SLFPA-E or Authority) met on February 21, 2013 in the Orleans Levee District Franklin Administrative Complex, 6920 Franklin Avenue, Meeting Room 221, New Orleans, LA. Mr. Kemp called the meeting to order at 2:40 p.m.

Opening Comments: Mr. Kemp commented that an abbreviated committee meeting was held last month. The Committee is beginning its focus on Bob Jacobsen's work on flooding hazards in the polders and the effort to look at additional measures that the SLFPA-E Board can investigate and perhaps bring into being in order to lower flood risks beyond the perimeter 100-year level. He recognized the attendance of SLFPA-E Commissioners Wittie, Estopinal and Pineda at the meeting.

Adoption of Agenda: The agenda was approved.

Approval of Minutes: The minutes of the November 7, 2012, and January 17, 2013, Coastal Advisory Committee meetings were approved.

Public Comments: None.

New Business:

A. Presentation by Bob Jacobsen—Polder Flooding/Interior Compartmentalization (Hurricane Surge Hazard Analysis for Southeast Louisiana – Part IV).

Bob Jacobsen, PE, pointed out that the residual risk management and compartmentalization study and the hurricane surge hazard analysis study that has been discussed in prior Coastal Advisory Committee meetings are separate studies. The work being reported on today concerns how the SLFPA-E understands the residual risks from all of the work contributed through the efforts of the U.S. Army Corps of Engineers (USACE) New Orleans District, U.S. Army Engineer Research and Development Center (ERDC) and others. He stated that he would return at a future date to more distinctly discuss the compartmentalization work. Part of the review is the state of the practice. The current state of the practice is being compared with what was done to develop the current understanding of residual risks. Proposed future improvements will be recommended with regards to the 500-year risk.

Presentations on Part I (Hurricane Climatology), Part II (Modeling Surge Risks), Part III (Hurricane Surge Hazard Analysis) were provided at previous Committee meetings. Mr. Jacobsen reviewed some of the key points and findings in Parts I, II and III. He noted

that Independent technical reviews from parallel efforts of the State are being done on Part I - Hurricane Climatology.

Mr. Jacobsen explained that Part IV (Hurricane Surge Hazard Analysis for Polders) addresses how to determine what the return frequencies are inside the bathtub.

Mr. Jacobsen addressed the topic of additional hydrology and hydrologic (H&H) processes:

- Perimeter and Waves: The surge model does not always provide the hydrograph, which needs to be artificially constructed. Foreshore wave conditions are needed in Zones C and D. Additional data is needed on the breaker parameter.
- Seepage: The volume of seepage is not significant compared to other inflows; however, seepage is significant in terms of the potential for breach. Therefore, a comprehensive inventory of seepage pathways is needed because of the significance in the potential for breach.
- Overtopping: The five phases of overtopping presented in the analysis and the instantaneous rate versus the average rate were discussed.
- Breaching: The mechanisms of breaching [erosion (exterior and interior), collapse and failure rules] were discussed.
- Rainfall: There is insufficient publication of data correlating rainfall with any of the hurricane characteristics used in the climatology. Much of the significant rainfall comes from storm bands and storm cell training, which is not captured in the climatology.
- Pumping: Pumping systems consist of various components and various automatic or manual failures can occur. There is no publication to establish a rigor on probabilities and variance of pumps operating during surge events.
- Internal Routing: In the compartmentalization study water is routed using an ADCIRC model. Whatever model is used when routing water put into the bathtub must be coupled with the external system and hydrographs.
- Interior Wind and Waves: Steady-state wind setup and fetch limited waves were discussed.

Mr. Jacobsen reviewed the Joint Probability Analysis (JPA) of inundation:

- Polder surge inundation hazards are separate from other polder flood hazards (e.g., tropical rainfall only flooding, non-tropical rainfall only and Mississippi River flood).
- Sources of polder surge inundation pose different threats. Examples of an individual seepage location, minor-to-moderate overtopping, and a high level hazard posed by major overtopping and breaching were discussed.
- Five simplified 6-hour inflow scenarios were discussed:
 1. Multiple Seepage/Small Wave Overtopping
0.1 cfs/ft; 3 mi. 785 acre-ft. of water

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| 2. Moderate Wave-Only Overtopping
0.5 cfs/ft; 3 mi. | 3,924 acre-ft. of water |
| 3. Overtopping- 1 cfs/ft; 3 mi. | 7,855 acre-ft. of water |
| 4. Major Breach - 20 cfs/ft; 2,000 ft. | 19,835 acre-ft. of water |
| 5. Multiple Major Breaches - 20 cfs/ft; 10,000 ft. | 99,174 acre-ft. of water |
- Estimates were reviewed for an inundation from rainfall only with no pumping for a 100-year event for a 24 hour duration and included:
 - New Orleans East - 16,000 acre-ft. of water
 - St. Bernard Polders 1, 3 and 4 - over 20,000 acre-ft. of water
 - Orleans Metro - 29,000 acre-ft. of water
 - East Jefferson - 31,000 acre-ft. of water

Mr. Jacobsen reviewed and discussed the polder surge inundation for Hurricane Katrina based on the Interagency Performance Evaluation Task Force (IPET) work.

Mr. Jacobsen discussed an overview of the JPA. Quantifying polder inundation probabilities associated with hurricane surge events requires expanding the JPA for exterior surge. A set of whole perimeter surge events is needed and must be coupled with the SOBRP (seepage, overtopping, breaching, rainfall and pumping) process and computations made inside the polder. He stated that he did not recommend a surge response approach because a set of probabilistic events is needed around the perimeter and then the JPA for the interior. The surge response only gives a probability at discrete points and not the probability of a whole polder event. He discussed the development and use of SOBRP scenarios.

Mr. Jacobsen discussed recent applications of the JPA for inundation (IPET Volume 8, the CPR Study, and HSDRRS design and resiliency). He cautioned that the 100-year and 500-year inundation hazards in 2009 IPET Volume 8 does not include the final design in the analysis. The 100-year and 500-year inundation hazards were reviewed in comparison to 6-hour/100-year rainfall minus 6-hour pumping in 2009 IPET Volume 8. The IPET analysis is the only residual risk analysis. The CPR Study and HSDRRS design address hazard from a limited perspective. He discussed the recent applications for the CPR study and HSDRRS design and resiliency.

Mr. Kemp commented that it seemed that the next step would be to discuss compartmentalization and how it fits into this analysis. Mr. Jacobsen noted that the grant proposal written about three years ago for the Community Development Block Grant (CDBG) included a look at compartmentalization without having this foundation already laid. The polder models have been developed and two of the three models have been validated. Public stakeholder meetings are being held to identify current natural or manmade features or structures that could potentially be a subject of enhancement or further work. A list of structures that are worth additional engineering analysis is being finalized. This may also present an opportunity to discuss what needs to be done on the IHNC should permission not be received to move water from the corridor into the Central Wetlands.

Mr. Jacobsen further explained that a reasonable scenario would be to input a 30,000 acre-ft. inflow of water into a number of places to determine what features may already control something of this magnitude. He commented that with the resiliency of the system at the 500-year level being the top priority, he did not recommend that a lot of money be spent chasing after compartmentalization that is not low hanging fruit. He anticipated that in the next couple of months he would be able to show the Committee what the breaches and flooding would be like without any structures.

Mr. Luettich noted that a comment was made that the low hanging fruit may not include interior poldering and may include other actions or efforts. Mr. Jacobsen was requested to provide a prioritized list of actions or efforts with as much specificity as possible. Mr. Luettich explained that in his experience rarely is water coming over the top of a levee of itself a flood hazard. There is usually pump capacity and the amount of water from overtopping may be small compared to rainfall. The potential for a major breach drives the true risk inside the system. He stated that if his perception is correct, then clearly the Authority should be trying to ensure that the levees do not breach. This assumption would drive the Authority towards a set of actions or prioritization.

Mr. Jacobson responded that he would like to have this discussion with Robert Turner, SLFPA-E Regional Director, particularly in terms of ensuring that the remaining budget in the CDBG is used properly. The CDBG study is essentially supposed to find ways to reduce risks. The report generated for the Authority concerns how risks are analyzed. The CDBG study should address the projects to reduce risks. He pointed out that the most significant efforts for reducing risks include the use of the Central Wetlands as a relief valve, the resiliency issues identified by the USACE's efforts and fine tuning the resiliency of the system.

Mr. Jacobsen advised that the scope of work for the compartmentalization study included identifying with stakeholders internal ways to further divide the bathtubs. There is a list of projects under this effort. He pointed out that if the decision is made that the Central Wetlands cannot be used as a relief valve, then some of his engineering effort should focus on how to buttress the design for the IHNC.

B. Discussion of identification of small-scale coastal restoration projects and potential funding sources.

The Committee deferred this item to the next meeting. Sheila Grissett, Special Assistant to the SLFPA-E Regional Director, offered to provide information to assist the Committee and was requested to provide a list that includes the primary causal factors of risks to the system (geographically explicit) and the level of the risks. Mr. Kemp also requested that the list include any generic ways that the risks can be addressed.

There was no further discussion; therefore, the meeting was adjourned at 3:55 p.m.